JOURNAL OF QUALITY TECHNOLOGY

Index

Volume 29, Nos. 1-4, 1997

ARTICLES

All articles, including material that appears in the Computer Programs and Technical Aids Departments, are listed alphabetically by author and numbered sequentially. These sequential article numbers are used to identify the articles in the Key Words list, which begins on page 498.

1. ADKE, S. R. AND HONG, X., *A Supplementary Test Based on the Control Chart for Individuals* . . . . . January, 16-20
2. ALBIN, S. L.; KANG, L.; AND SHEA, G., *An X and EWMA Chart for Individual Observations* . . . . . January, 41-48
3. AMES, A. E.; MATTUCCI, N.; MACDONALD, S.; SZONYI, G.; AND HAWKINS, D. M., *Quality Loss Functions for Optimization Across Multiple Response Surfaces* . . . . . July, 339-346
4. ANDERE-RENDON, J.; MONTGOMERY, D. C.; AND ROLLIER, D. A., *Design of Mixture Experiments Using Bayesian D-Optimality* . . . . . October, 451-463
5. BARTON, R. R., *Pre-Experiment Planning for Designed Experiments: Graphical Methods* . . . . . July, 307-316
6. BINGHAM, T. C., *An Approach to Developing Multi-Level Fractional Factorial Designs* . . . . . October, 370-380
7. BOX, G. E. P.; COLEMAN, D. E.; AND BAXLEY, R. V., JR., *A Comparison of Statistical Process Control and Engineering Process Control* . . . . . April, 128-130
8. BOX, G. AND LUCEÑO, A., *Discrete Proportional-Integral Adjustment and Statistical Process Control* . . . . . July, 248-260
9. BOYLES, R. A., *Estimating Common-Cause Sigma in the Presence of Special Causes* . . . . . October, 381-395
10. BURDICK, R. K. AND LARSEN, G. A., *Confidence Intervals on Measures of Variability in R&R Studies* . . . . . July, 261-273
11. CAIN, M. AND JANSSEN, C., *Target Selection in Process Control Under Asymmetric Costs* . . . . . October, 464-468
12. CHAMP, C. W. AND RIGDON, S. E., *An Analysis of the Run Sum Control Chart* . . . October, 407-417
13. COSTA, A. F. B., $\overline{X}$ *Chart with Variable Sample Size and Sampling Intervals* . . . . . April, 197-204
14. CROWDER, S. V.; HAWKINS, D. M.; REYNOLDS, M. R., JR.; AND YASHCHIN, E., *Process Control and Statistical Inference* . . . . . April, 134-139
15. DEL CASTILLO, E.; FAN, S.-K.; AND SEMPLE, J., *The Computation of Global Optima in Dual Response Systems* . . . . . July, 347-353
16. DEL CASTILLO, E. AND HURWITZ, A. M., *Run-to-Run Process Control: Literature Review and Extensions* . . . . . April, 184-196
17. DRAPER, N. R. AND GUTTMAN, I., *Two-Level Factorial and Fractional Factorial Designs in Blocks of Size Two* . . . . . January, 71-75
18. ENGEL, J. AND DE VRIES, B., *Evaluating a Well-Known Criterion for Measurement Precision* . . . . . October, 469-476
19. FALTIN, F. W.; MASTRANGELO, C. M.; RUNGER, G. C.; AND RYAN, T. P., *Considerations in Monitoring of Autocorrelated and Independent Data* . . . . . April, 131-133
20. GLEN, A. G. AND LEEMIS, L. M., *The Arctangent Survival Distribution* . . . . . April, 205-210
21. GRIMSHAW, S. D. AND ALT, F. B., *Control Charts for Quantile Function Values* . . . January, 1-7
22. HAMADA, M. AND NELDER, J. A., *Generalized Linear Models for Quality-Improvement Experiments* . . . . . July, 292-304

23. JESKE, D. R. AND MARLOW, N. A., *Alternative Prediction Intervals for Pareto Proportions* . . . . . July, 317-326
24. KEATS, J. B.; DEL CASTILLO, E.; VON COLLANI, E.; AND SANIGA, E. M., *Economic Modeling for Statistical Process Control* . . . . . April, 144-147
25. KEATS, J. B.; LAWRENCE, F. P; AND WANG, F. K., *Weibull Maximum Likelihood Parameter Estimates with Censored Data* . . . . . January, 105-110
26. LEDOLTER, J. AND SWERSEY, A., *Dorian Shainin's Variables Search Procedure: A Critical Assessment* . . . . . July, 237-247
27. LEDOLTER, J. AND SWERSEY, A., *An Evaluation of Pre-Control* . . . . . April, 163-171
28. LUNANI, M.; NAIR, V. N.; AND WASSERMAN, G. S., *Graphical Methods for Robust Design with Dynamic Characteristics* . . . . . July, 327-338
29. MASON, R. L.; CHAMP, C. W.; TRACY, N. D.; WIERDA, S. J.; AND YOUNG, J. C., *Assessment of Multivariate Process Control Techniques* . . . . . April, 140-143
30. MASON, R. L.; TRACY, N. D.; AND YOUNG, J. C., *A Practical Approach for Interpreting Multivariate T^2 Control Chart Signals* . . . . . October, 396-406
31. MAYS, D. P. AND EASTER, S. M., *Optimal Response Surface Designs in the Presence of Dispersion Effects* . . . . . January, 59-70
32. MONTGOMERY, D. C. AND WOODALL, W. H., *A Discussion on Statistically-Based Process Monitoring and Control* . . . . . April, 121-162
33. MYERS, R. H.; KIM, Y.; AND GRIFFITHS, K. L., *Response Surface Methods and the Use of Noise Variables* . . . . . October, 429-440
34. MYERS, R. H. AND MONTGOMERY, D. C., *A Tutorial on Generalized Linear Models* July, 274-291
35. NELSON, L. S., *Factors for Confidence Limits on Standard Deviations* . . . . . October, 485-487
36. NELSON, L. S., *Graphical Tests for Association* . . . . . January, 111-112
37. NELSON, L. S., *Randomization Test for Linear Correlation/Regression* . . . . . July, 354-356
38. NELSON, L. S., *Supplementary Runs Tests for np Control Charts* . . . . . April, 225-227
39. PALM, A. C.; RODRIGUEZ, R. N.; SPIRING, F. A.; AND WHEELER, D. J., *Some Perspectives and Challenges for Control Chart Methods* . . . . . April, 122-127
40. PIEPEL, G. F., *Survey of Software with Mixture Experiment Capabilities* . . . . . April, 76-85
41. PRABHU, S. S. AND RUNGER, G. C., *Designing a Multivariate EWMA Control Chart* January, 8-15
42. PULAK, M. F. AND AL-SULTAN, K. S., *A Computer Program for Process Mean Targeting* . . . . . October, 477-484
43. RYAN, T. P. AND SCHWERTMAN, N. C., *Optimal Limits for Attributes Control Charts* . . . . . January, 86-98
44. SCHWERTMAN, N. C. AND RYAN, T. P., *Implementing Optimal Attributes Control Charts* . . . . . January, 99-104
45. SMITH, W. F., JR. AND BEVERLY, T. A., *Generating Linear and Quadratic Cox Mixture Models* . . . . . April, 211-224
46. SPIRING, F. A., *A Unifying Approach to Process Capability Indices* . . . . . January, 49-58
47. STEINER, S. H. AND HAMADA, M., *Making Mixtures Robust to Noise and Mixing Measurement Error* . . . . . October, 441-450
48. STOUMBOS, Z. G. AND REYNOLDS, M. R., JR., *Control Charts Applying a Sequential Test at Fixed Sampling Intervals* . . . . . January, 21-40
49. VINING, G. G. AND REYNOLDS, M. R., JR., *Multi-Level Sampling Interval Approach to Control Charts* . . . . . October, 418-428
50. WATTS, D. G., *Explaining Power Using Two-Level Factorial Designs* . . . . . July, 305-306
51. WOODALL, W. H., *Control Charts Based on Attribute Data: Bibliography and Review* . . . . . April, 172-183

DEPARTMENTS

Computer Programs

15. DEL CASTILLO, E.; FAN, S.-K.; AND SEMPLE, J., *The Computation of Global Optima in Dual Response Systems* . . . . . July, 347-353

25. KEATS, J. B.; LAWRENCE, F. P; AND WANG, F. K., *Weibull Maximum Likelihood Parameter Estimates with Censored Data* . . . . . January, 105-110
42. PULAK, M. F. AND AL-SULTAN, K. S., *A Computer Program for Process Mean Targeting* . . . . . October, 477-484
44. SCHWERTMAN, N. C. AND RYAN, T. P., *Implementing Optimal Attributes Control Charts* . . . . . January, 99-104
45. SMITH, W. F., JR. AND BEVERLY, T. A., *Generating Linear and Quadratic Cox Mixture Models* . . . . . April, 211-224

Technical Aids

35. NELSON, L. S., *Factors for Confidence Limits on Standard Deviations* . . . . . October, 485-487
36. NELSON, L. S., *Graphical Tests for Association* . . . . . January, 111-112
37. NELSON, L. S., *Randomization Test for Linear Correlation/Regression* . . . . . July, 354-356
38. NELSON, L. S., *Supplementary Runs Tests for np Control Charts* . . . . . April, 225-227

Book Reviews

Applied Linear Statistical Models by J. Neter, M. H. Kutner, C. J. Nachtsheim, and W. Wasserman . . . . . K. A. F. COPELAND April, 233
Aspects of Statistical Inference by A. H. Welsh . . . . . KAREN A. F. COPELAND October, 492
Biplots by J. C. Gower and D. J. Hand . . . . . K. A. F. COPELAND April, 233-234
Data Analysis Using Microsoft Excel 5.0 by M. R. Middleton . . . . . D. SARTORI April, 228-229
Engineering Statistics-The Industrial Experience by B. Ostle, K. V. Turner, Jr., C. R. Hicks, and G. W. McElrath . . . . . JOHN LAWSON October, 488-490
General Statistics by W. Chase and F. Bown . . . . . J. J. BORKOWSKI January, 113-114
Glossary and Tables for Statistical Quality Control by J. L. Bossert . . . . . J. SULLIVAN April, 229-230
A Guide to Chi-Squared Testing by P. E. Greenwood and M. S. Nikulin . . . . . KAREN A. F. COPELAND October, 493
An Introduction to Categorical Data Analysis by A. Agresti . . . . . K. A. F. COPELAND October, 493
Introduction to Statistical Quality Control by D. C. Montgomery . . . . . W. M. BOWEN July, 357-359
Linear and Nonlinear Models for the Analysis of Repeated Measurements by E. R. Vonesh and V. M. Chinchilli . . . . . K. A. F. COPELAND October, 493-494
Linear Statistical Models by J. H. Stapleton . . . . . K. A. F. COPELAND October, 494
Local Polynomial Modelling and Its Applications by J. Fan and I Gijbels . . . . . K. A. F. COPELAND April, 234
Measurement, Regression, and Calibration by P. J. Brown . . . . . G. S. WASSERMAN January, 114-116
Modern Applied Statistics with S-Plus by W. N. Venables and B. D. Ripley . . . . . C. WILLIAMS January, 116
Modern Regression Analysis by T. P. Ryan . . . . . K. A. F. COPELAND October, 490-491
Multiple Comparisons: Theory and Methods by J. C. Hsu . . . . . P. R. NELSON July, 359
Multivariate Statistical Analysis by N. C. Giri . . . . . K. A. F. COPELAND October, 494
Nonparametric Regression and Generalized Linear Models by P. J. Green and B. W. Silverman . . . . . K. A. F. COPELAND April, 234
Outliers in Statistical Data by V. Barnett and T. Lewis . . . . . D. M. SEBERT April, 230-231
The Power of Statistical Thinking: Improving Industrial Processes by M. G. Leitnaker R. D. Sanders, and C. Hild . . . . . S. R. UNGEMACH July, 359-361
Practical Engineering Statistics by D. Schiff and R. B. D'Agostino . . . . . L. S. NELSON January, 117-118
Probability and Statistics for Engineers and Scientists by A. J. Hayter . . . . . M. M. KILGO, III July, 361-362
Reliability Engineering by E. A. Elsayed . . . . . W. PELZ January, 118-119
Response Surfaces: Designs and Analyses by A. I. Khuri and J. A. Cornell . . . . . R. L. MASON July, 362-364
Seeing Through Statistics by J. M. Utts . . . . . L. S. NELSON April, 232

SPC Essentials and Productivity Improvement: A Manufacturing Approach by W. A. Levinson and F. Tumbelty . . . . . P. S. WLUDYKA July, 364-365
SPC Made Easy by P. McReynolds . . . . . C. R. LOVELACE April, 231-232
Statistical Quality Control by E. L. Grant and R. S. Leavenworth . . . . . R. L. EDGEMAN July, 365-366
Statistically Speaking, A Dictionary of Quotations by C. C. Gaither and A. E. Cavazos-Gaither . . . . . L. S. NELSON April, 232-233
Statistics for Environmental Engineers by P. Mac Berthouex and L. C. Brown . . . . . K. VUKOVINSKY July, 366-367
Statistics of Quality by S. Ghosh, W. R. Schucany, and W. B. Smith . . . . . K. A. F. COPELAND April, 234-235
Statistics From Scratch: An Introduction for Health Care Professionals by D. Bowers . . . . . T. E. MELANDER October, 491-492
Visual Explanations by E. R. Tufte . . . . . K. A. F. COPELAND July, 367

Book Reviewers

Borkowski, J. . . . . January, 113-114
Bowen, W. M. . . . . July, 357-359
Copeland, K. A. F. . . . . April, 233
Copeland, K. A. F. . . . . April, 233-234
Copeland, K. A. F. . . . . April, 234
Copeland, K. A. F. . . . . April, 234
Copeland, K. A. F. . . . . April, 234-235
Copeland, K. A. F. . . . . July, 367
Copeland, K. A. F. . . . . October, 490-491
Copeland, K. A. F. . . . . October, 492
Copeland, K. A. F. . . . . October, 493
Copeland, K. A. F. . . . . October, 493
Copeland, K. A. F. . . . . October, 493-494
Copeland, K. A. F. . . . . October, 494
Copeland, K. A. F. . . . . October, 494
Edgeman, R. L. . . . . July, 365-366
Kilgo, M. M., III . . . . . July, 361-362
Lawson, J. . . . . October, 488-490
Lovelace, C. R. . . . . April, 231-232
Mason, R. L. . . . . July, 362-364
Melander, T. E. . . . . October, 491-492
Nelson, L. S. . . . . January, 117-118
Nelson, L. S. . . . . April, 232
Nelson, L. S. . . . . April, 232-233
Nelson, P.R. . . . . July, 359
Pelz, W. . . . . January, 118-119
Sartori, D. . . . . April, 228-229
Sebert, D. M. . . . . April, 230-231
Sullivan, J. . . . . April, 229-230
Ungemach, S. R. . . . . July, 359-361
Vukovinsky, K. . . . . July, 366-367
Wasserman, G. S. . . . . January, 114-116
Williams, C. . . . . January, 116
Wludyka, P. S. . . . . July, 364-365

MISCELLANEOUS

Editorial Collaborators . . . . . October, 500
Corrigenda . . . . . October, 501

KEY WORDS

The numbers used with the key words are the numbers assigned to the articles listed on the previous pages. They are not page numbers.

Analysis of Means, 32
Analysis of Variance, 10, 32
Assignable Causes, 32
Attributes Control Charts, 32, 43, 44, 51
Attributes Data, 51
Autocorrelated Observations, 32
Autoregressive Integrated Moving Average Process, 32
Average Run Length, 1, 12, 32, 41, 44, 48
Average Sample Number, 48
Average Time to Signal, 13
Bayesian Methods, 4
Binomial Model, 38
Blending, 45
Blocking, 17
Bootstrap Methods, 23
Capability, 27
Censored Data 20, 25
Chi-Square Control Charts, 21, 32, 41
Computer Models, 35

Confidence Intervals, 10
Confidence Limits, 35
Control Charts, 2, 13, 27, 32, 38
Control Limits, 38
Correlated Data, 32
Correlation, 36, 37
Cost Functions, 11
Critical Values, 38
Cumulative Sum Control Charts, 32, 49
Cuscore Statistic, 32
Data Analysis, 22, 34
Design of Control Charts, 44
Design of Experiments, 5, 6, 26, 28, 34, 40
Distribution-Free Procedures, 36, 37
D-Optimality, 4, 31
Economic Control Charts, 32
Economic Design, 11
Economic Statistical Control Charts, 32
Engineering Process Control, 8, 16, 32
Exponentially Weighted Moving Average Control Charts, 2, 32, 41
Factorial Designs, 17, 31
Feedback Control, 8, 16, 32
Fractional Factorial Designs, 6, 17, 26
Fractional Factorial Experiments, 6
Generalized Linear Models, 22, 34
Graphical Methods, 5, 28, 36
Hotelling's T^2 Statistic, 30, 32
Individual Measurements, 2
Inspection, 42
ISO Standards, 32
Least Squares, 34
Lifetime Data, 20
Loss Functions, 3, 47
Markov Chain, 12
Maximum Likelihood, 9, 20, 22, 25, 34
Median, 9
Minimum Mean Squared Error Controller, 8
Mixture Experiments, 4, 40
Mixture Models, 45
Moving Range Control Charts, 1, 2
Moving Ranges, 9
Multiple Regression, 30
Multiple Responses, 3
Multivariate Control Charts, 21, 30, 32, 41
Multivariate Quality Control, 32
Nonparametric Estimation, 23
Nonparametric Tests, 36, 37
Optimal Control Limits, 43
Optimal Target Value, 42
Optimization, 15
Outliers, 9
Parameter Design, 33
Parameter Estimation, 25
Pareto Analysis, 23
Permutation Tests, 37
Polynomial Model, 45
Precision, 18
Pre-Control, 27
Prediction Intervals, 23
Prediction Limits, 33
Principal Components, 32
Process Capability, 46
Process Capability Ratio Index, 46
Process Control, 8, 11, 32
Process Optimization, 3, 42
Process Variability, 18, 33
Quality, 51
Quality Improvement, 26, 28
Randomization Tests, 37
Regression, 34
Regression Analysis, 37
Repeatability, 10
Reproducibility, 10
Residuals, 22
Resolution, 6
Response Surface Methodology, 15, 31, 33, 40, 45
Risk, 18
Robust Design, 3, 33, 47
Runs Test, 38
Shewhart Control Charts, 12, 21, 32
Standard Deviation, 35
Statistical Process Control, 13, 16, 27, 32, 41, 46, 48, 49, 51
T^2 Control Charts, 32
Taguchi Methods, 47
Time Series Analysis, 32
Tolerance Limits, 33
Trends, 9, 12
Two-Level Factorial Designs, 50
Variable Sample Size Control Charts, 13, 48
Variable Sampling Interval Control Charts, 13, 48
Variables Control Charts, 32
Weibull Distribution, 25
X Control Charts, 1, 2

Editorial Collaborators

In addition to the fine work of the Editorial Review Board of the *Journal of Quality Technology*, the individuals whose names appear below have also made significant contributions to the Journal by refereeing submitted manuscripts. On behalf of *JQT* and ASQ, I wish to acknowledge and thank these referees publicly for their services.

Douglas C. Montgomery
Editor

B. Michael Adams
Susan L. Albin
Raid Amin
Bruce Ankenman
Ronald G. Askin
Russell Barton
Harriet Black-Nembhard
Russell Boyles
John F. Brewster
Rex Bryce
Richard K. Burdick
W. Hans Carter, Jr.
Lisa Custer
Necip Doganaksoy
Norman Draper
Robert Easterling
E. A. Elsayed
Nicholas Farnum
F. F. Gan
Jay Gardiner
Ann Giovannitti-Jensen
Scott Grimshaw
Sneh Gulati
Douglas Hawkins
Russell Heikes
Mark Henderson
Cheryl L. Jennings
Frank Kaminsky
Kailash Kapur
Jeff Lanning
Frederick Lawrence
Russell Lenth
Sharon Lewis
Cyndi Lovelace
Brian MacPherson
Harry Martz
Allan Mense
George Milliken
Chris Nachtsheim
Leon Pesotchinsky
Phil Pfeifer
Sharad Prabhu
Kathy Prewitt
Charles Quesenberry
M. A. Rahim
Gregory Reinsel
Steven Rigdon
Erwin Saniga
Neil Schwertman
Arvind Shah
Jim Simpson
James Stanley
Paul Stephenson
Richard Storch
Zachary Stoumbos
Joe Sullivan
Nola D. Tracy
Harry Wadsworth
William Zimmer
Lora S. Zimmer